

Work Order ID 153147

Tuesday, November 08, 2016 10:53:08 AM

153147

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Item ID: D6104-005 Accept *N900040100* Setup Start *NS1*
Revision ID: Stop *NS2*
Item Name: Round Billet, 17-4
Start Date: 10/25/2016 Start Qty: 10.00 *10* Cust Item ID:
Required Date: 11/8/2016 Req'd Qty: 10.00 *10* Customer:

Reference: DAS
21
Approvals: Process Plan: 9-89 Date: NOV 10 2016 Tooling: Date: Run Start *NR1*
QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6104	Rev B								

100 0.00
100 PURCHASING
Purchasing Memo 0.00
Purchasing Issue P/O: 34278 a)Description: S.S round billet b) Ø4.00" x
5.10" longc) Tolerance on all dimensions are +0.030"/-0.000" d) Material:
17-4PH Stainless steel (Ams 5643 or Aisi 630)e)One blank makes 2 partsf)
Material certification required
10 NOV 10 2016 DAS 13 9-89

110 0.00
110 Receive & Inspect for Damage & Mat'l Certs
Packaging Memo 0.03
Packaging Ensure material certification is attached
10x 8/16-11-17

120 0.00
120 QC In-Coming Inspection Material
QC Memo 0.00
Quality Control Ensure Material certification comply to Dwg D6104
10 16/11/17

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

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Item Name: Round Billet, 17-4
Start Date: 10/25/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 11/8/2016 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: MAT043	0.00							
130									
Packaging	Memo	0.02				<u>10</u>	<u>0</u>		<u>mf</u>
Packaging	LOCATION: MAT043								<u>10/11/17</u>
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.17							
Quality Control									

**DAS
21
9-89**

NOV 17 2016

NOV 17 2016

**DAS
21
9-89**

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :							
Misidentified	☐	Past Due	☐								

Picklist Print

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Work Order ID: 153147

153147

Parent Item: D6104-005

D6104-005

Parent Item Name: Round Billet, 17-4

Start Date: 10/25/2016

Required Date: 11/8/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP A: 01.05.08New Issue EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6104-005P		Purchased	No			110	Each	0.0000	1	10			
D6104-005P									**				
17-4 SS Roundbar 4.00"Od													

10x SP/6-11-17

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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		OTHER : _____							

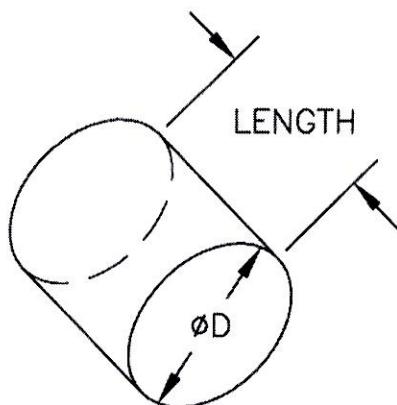


DESIGN 	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29

SPECIFICATION CONTROL DRAWING



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 153147 M.C.
16-11-10

MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRC)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34278**

Purchase Order Date 11/10/2016

PO Print Date 11/10/2016

Page Number 2 of 2

Order From :
METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

VU-MET002

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via: Yours ppd

Ship Acct:

Buyer

Customer POID

Customer Tax # 10127-2607

Terms Net 30

Currency USD

FOB Destination-Collect

Chantal Lavoie

4	D6104-005P	17-4 SS Roundbar 4.00"Od	11/24/2016	10.00	\$54.20	\$542.00
			Yes	Each		
			11/24/2016			

AS PER DWG D6104 REV. B
B153147
MATERIAL: 17-4 PH AS PER AMS 4643 OR AISI 630
SIZE: 4.00" X 5.10" LONG

NOV 17 2016

DAS
9-26-89

Line Total: \$542.00

5	71401-45	PROCUREMENT QUALITY CLAUSES	11/24/2016	1.00	\$0.00	\$0.00
			No			
			11/24/2016			

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

Line Total: \$0.00

PO Total: \$1,747.30

U
CL

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 2

Change Date: 11/10/2016

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3127508

Ship From:		Sold To:		Ship To:		Deliver To:	
A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped	F.O.B.	Freight Terms		Carrier		BOL No	
15-NOV-16	ORIGIN	Prepaid		MANITOULIN		3127508-2	

Shipment Details			Final Destination Branch - TOR				
Order No 4564436	Line No 3	Item No 42464.MO	Description 4.0000.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.132.0000-156.0000 CUT TO 5.1 IN (+ .1250/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643				
Purchase Order No 34278		Part Number YOUR ITEM NUMBER: D6104-005	Ordered Qty 10.00 PCS	Invoice Qty 10.00 PCS			
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No. 120669110	Mill NORTH AMERICAN STAINLESS	Heat Number 	Mech Id	PCS 10	Width (IN)	Length (IN)	Shipped Qty(LBS) 187.2907

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned.

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.

Date Printed: 15-NOV-2016 03:25:51 PM



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 2 of 2

for credit.	
Reviewed by Authorized Castle Metals Representative:	Date: Name:

NOV 15 2016



DAS
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9-89

NOV 17 2016

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: DL104-005
 DATE: 12/11/17

PO / BATCH NO.: 34278/153147

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 10
 QUANTITY INSPECTED: 10
 QUANTITY REJECTED: _____

THICKNESS ORDERED: 04.00
 THICKNESS RECEIVED: 04.050
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y ☒ N	
CORRECT FINISH	☒ Y N	
CORROSION	Y ☒ N	
CORRECT GRAIN DIRECTION	☒ Y N	
CORRECT MATERIAL	☒ Y N	17-4 PH
CORRECT THICKNESS	☒ Y N	04.050
PHOTO REQUIRED	Y ☒ N	
CORRECT MATERIAL	☒ Y N	AISI 5643 AISI 630
CORRECT REF # TO LINK CERT	☒ Y N	HEAT # 096M
CORRECT MATERIAL IDENTIFICATION	☒ Y N	DL104-005
CORRECT M# ON THE MATERIAL	☒ Y N	B153147
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y ☒ N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y ☒ N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION

ENGINEERING SIGNOFF (if required)

INSPECTED BY: [Signature]

SIGNED OFF BY: _____

DATE: 12/11/17

DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in